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**Monday May 17, 1875.**

*From our reports this morning the probabilities are that the weather for to-day will be clear and cold.*

Gold closed in New York Saturday at 115¼.

The *Plain Dealer* tries to make out that Archbishop Purcell is a Republican—this, too, in the face of the fact that the Archbishop's organ, the *Catholic Telegraph* of Cincinnati, formally announces the alliance of the Roman Catholic Church of Ohio with the Democratic party! The *P. D.* had better try again in manufacturing false statements.

Our Washington special announces that a new daily, the *Tribune*, is to appear in that city this morning. Its politics are to be "independent Democratic." It is easy to understand what that means. It will have independence enough to slander and traduce every man in the Republican party from the President down, and to play the sycophant to every Democrat. On Saturday another paper of the same stripe, the *Telegram*, will also make its bow to the people of the national capital. The next news of them will be—two more unfortunates gone to their rest.

At the meeting of the American Silk Association, held in New York last week, Hon. W. D. Kelley, of Philadelphia, stated that the silk industry of this country was the work of legislation, and that it had sprung into existence since the passage of the tariff act of 1864. The statement was received with deafening applause, and although Sammy Cox and a few other Free Traders were present, they did not contradict it. It would have been indiscreet for the dapper little Samuel to have filed a demurrer against Mr. Kelley's assertion. There were too many gentlemen present who had a practical knowledge of the real benefits of protection. During the year 1874 the total value of silk manufactured in the United States footed up to $18,692,482, and without the protective tariff it is certain half this sum could never have been reached. The silk industry of the United States is now on a pro-perous basis, and it owes its establishment to the protective tariff established by the Republican party.

The usual little rebellion has occurred in Hayti again. It was a small affair, but it would undoubtedly have resulted in the assassination of the President and the revolutionizing of the Government had it not been for the timely discovery of the plot and the fidelity of the Government troops—the latter fact being somewhat remarkable since in Hayti the Government troops are usually found on the side of the insurgents. As it was, President Dominique heard that three prominent men, Monplaisier Pierre and Generals Bryce and Caval, had formed a plot to assassinate him and make Pierre President. He therefore sent three detachments of troops to arrest the traitors, while he (Dominique) went to church to attend the agricultural festival held throughout the island on the first of May. Bryce was surrounded and killed. Caval was wounded and driven into his house, where he retired to the attic and committed suicide, and Pierre, not having the courage to die, fled to the protection of the American Consulate. It is not often that Haytien revolutions are so promptly and completely suppressed.

It seems to be quite essential to the happiness of the English people that something should be done or discovered to hopelessly scandalize the two American Evangelists, Moody and Sankey. At first the newspapers and clergy ignored them, but when great multitudes flocked to hear them, and hundreds of persons went through the process of being converted to Christianity by their ministrations, the orthodoxy of conservative England felt mortally offended. But the preaching and singing of the American evangelists can certainly do no harm, and the ten or fifteen thousand people who listen to them daily and nightly are certainly far better employed than they would be in the ale houses and other resorts of the middle and lower classes of London. If two men can attract a multitude of people and hold them in attentive interest for an hour by simply preaching the Scriptures and singing hymns, it is not obvious that those men are wholly beyond the pale of moral recognition, even though the preacher may make some mistakes in grammar and though both are Americans. But it was thought necessary that Moody and Sankey should be suppressed in some way, so the story has been started in London that they are employed by Barnum, who proposes to found a new religion as a means of advertising his hippodrome and has let the contract of establishing it to Moody and Sankey. Mr. Barnum's reason for sending his evangelists to England is said to be his desire to counterpoise the too powerful novelty of Cardinals McClosky and Manning. The wonder of it all is that such idiotic stuff as this is thought worthy of belief in London and telegraphed to the New York press at a dollar a word.

## The Valley Railroad.

The return from London of Mr. D. L. King, President of the Valley Railway, after an ineffectual attempt to negotiate the bonds of that company in the London market, naturally throws for a time some shadow of discouragement upon the immediate prospects of the Valley road. It is but just to say that Mr. King's purpose was defeated by causes wholly outside of the enterprise itself. It was not because the railway itself had not sufficient facts to recommend it, but because Mr. King arrived in London at a time when the money market there was in a highly unfavorable condition and when American railway securities were at the lowest point of unpopularity as investments. Even under all the general discouragements of the situation Mr. King had nearly succeeded in "placing" his bonds, but on the morning of the very day set for the meeting the London *Times* appeared with a leading article denouncing indiscriminately all American railway enterprises, and saying that Englishmen might as well throw their money into the sea as to invest in them. London people with money to lend look upon the *Times* as the arbiter of all commercial questions, and its untimely tirade against American railways destroyed, for a time at least, the last chance of Mr. King's success.

We who know the necessities out of which the Valley railway enterprise has grown, the resources that it will develop and the hands into which it has fallen, know perfectly well that the road is needed and must be finished. We know, moreover, that whatever may be true of some other American roads, the Valley railway if properly managed will pay, from the first, a fair return upon its cost. It has been, thus far, well and cheaply built. Mr. King's failure to negotiate its bonds is of course a temporary misfortune and may slightly delay the completion of the road, but it cannot prevent it nor diminish by a single dollar's worth the mineral and agricultural resources that the road will open up and convert into wealth.

## The Grasshoppers Moving East.

The opinion expressed by General Brisbin last summer, that the grasshopper plague was destined to become a national calamity, seems now to have had a good foundation. The pestiferous insect is up again and doing. The snow, ice, excessive cold and rain of the winter, fall and spring, were without any effect whatever upon its vitality, and the last reports indicate that a large section of country will be ravaged this summer.

In Southwestern Missouri the young "hoppers" are devouring everything green. Cattle and horses are dying of starvation by the hundred; men who one year ago were considered rich cannot now obtain a dollar credit, and merchants are leaving the country with their goods. In the neighborhood of St. Joseph, Missouri, the insects are said to be about as large as a housefly, and so thick that a person can catch fifty at one sweep of the hand through the air. They have been seen in eastern portions of that State in alarming numbers, but the farmers there think they will take up an eastward line of march and be out of the State before the crops are very far advanced. In Southern Kansas they are eating up everything green. A report from Southwestern Nebraska contains the following:

"Along the valley of the Republican, millions of young grasshoppers have made their appearance, and millions are yet in the ground to come out. This is too bad, after the long and patient work of the State Aid Society, I fear all their labor will be lost. Our farmers had a great deal of seed sent them, and planted good crops, only, as we dread, to feed our Egyptian foes."

Various reports come from Minnesota. A writer in one section says that on "high or dry and sandy soil, the eggs have hatched or are hatching in such numbers that the plagues of Egypt stand shadowed upon every knoll and destruction and want seem booked for a ride over the country on this winged scourge, the locust of the plains." The former Surveyor General of the State asserts that in some localities the eggs are to be found in countless numbers. In Northwestern Iowa they are hatching by millions, while in other portions of that State their eggs are said to be destroyed.

A very natural and widespread alarm is manifested through sections of Missouri, Kansas, Nebraska, Iowa and Minnesota. In some of these sections the devouring insects have already destroyed everything in the shape of a green leaf, bud or blade of grass, and in others they are hopping about in a way suggestive of distress and famine. The experience of last year increases the dread of encountering them again. Some farmers have already ceased seeding, believing that the sole benefit of their labors would accrue to the "hoppers." Some are diminishing their wheat and increasing their corn fields, with the hope that the crop may not mature until the destroyers had changed their quarters. Others are preparing to fight the invader. They have discovered that the "hoppers" have a habit of gathering in swarms along the fences at the coming on of the evening, and it is proposed to scatter straw along such spots, and, by lighting it, send a sheet of smoke and flame against the assailants as soon as they have effected a lodgement. This first appearance of the insect this spring looks discouraging for the Western farmers. In another column we print a letter from Missouri drawing a woeful picture of the situation there. The reports may possibly be exaggerated, but they came first by telegraph and next through our exchanges, and there is but little room to hope but they are true.

—Prince Amadeo of Italy is engaged in writing a history of his reign in Spain, and is assisted by his wife, the Princess Marie. The work will be entitled "Souvenirs of a King."

# A WONDERFUL DISCOVERY!

# A NEW MOTOR!

## The Days of Steam Probably Numbered.

[EDITORIAL CORRESPONDENCE.]

PHILADELPHIA, May 12, 1875.

There is living in this city a remarkable man—one who is a product of nature's noblest works—a man who has given years of toil and study endeavoring to discover a more convenient and cheaper substitute for steam. He was born in Chester county in the neighborhood of this city. He is a machinist by profession, and physically he could be taken for a model of Vulcan, for he is possessed with an immense amount of muscular strength—having been known to lift twelve hundred weight. Mentally, he is endowed with that which is more than a substitute for a liberal education. The name of this man is John W. Keely,—a name which I firmly believe will be known when that of Fulton, Watts, and Stevenson will have been forgotten.

For years Mr. Keely has been endeavoring to discover in the works of nature a hidden power or motor, which could be utilized for the benefit of mankind, and he has succeeded! The result of his discovery is so great, so marvellous and stupendous, that the practical mind will accept my statement with a feeling of incredulity. But I have seen his engine in operation, propelled by a heretofore unknown vapor of immense pressure, which is created from a small quantity of water with a certain admixture of air, and which is *produced purely by mechanical means*, without any chemicals whatever, without the aid of galvanism or electricity, without heat, and *without cost* aside from wear of machinery and expense of an engineer! So what I have seen with my own eyes I must believe.

Before attempting to describe the apparatus for producing this vapor,—or rather, in the language of an enthusiastic gentleman interested in the discovery—"the apparatus for *utilizing* the hidden power contained in water and air,"—I will give a brief sketch of the inventive career of Mr. Keely. For years he has been imbued with the belief that a motor was hidden somewhere which could be utilized and used in the place of steam comparatively without cost. He started out by first endeavoring to use the pressure of the atmosphere as a motor and succeeded. He constructed a peculiar engine, which was propelled by that pressure, and which was called an "Air Engine." He had it running for a number of months. The plan upon which this curious engine was constructed I cannot fully and satisfactorily explain, for I never saw it. But gentlemen, in whose words I have implicit confidence, have seen it running and have endeavored to describe it to me to the best of their ability. The nearest approach I can give of a description, is to say that the piston rod is fastened by a circular metal plate to an India rubber diaphragm on the top of the cylinder. By some mysterious arrangement, only known to Mr. Keely himself, the air is exhausted from the cylinder and the vacuum thus formed compels the diaphragm to bulge inward several inches, and when the air is let in the diaphragm bulges outwardly, in that way working backward and forward several hundred times a minute, making that number of revolutions in the engine. How he managed to make fifteen-pound pressure of the atmosphere do more than that same atmosphere, is a mystery. He did this in violation of the universal mechanical law that in order to produce a vacuum you must have more than atmospheric pressure to accomplish that object. He did this without the aid of electricity, galvanism or heat. But he did have the aid of a minute quantity of water, which was used in some way to produce the vacuum. As near as I could get at it, the engine was propelled somewhat on the principle of a hydraulic ram, where the pressure of a head of water is brought to bear upon a large piston, which in turn operates upon a smaller piston or plunger, thus enabling it to force a smaller stream of water higher than the head of the water that works the machine. But we know that a hydraulic ram submerged under water could not be made to move. Therefore, how could an atmospheric engine constructed on that principle be made to run while being submerged in the atmosphere, with an equal pressure all around it? But Mr. Keely did succeed in making such an engine work purely by atmospheric pressure, without electrical or chemical aid, or without heat, and he can produce evidence to prove this sufficient to hang a regiment of men.

It was supposed that this engine would become a success after certain improvements had been made, and do away with steam, at least in the use of small steam engines. Believing in this view, Mr. Keely continued the work of investigating and perfecting his engine. The model of this air engine occupied a space less than a cubic foot, and made 800 revolutions a minute with such force that the strongest man, with his hands encased in a pair of gloves, could not stop it by holding on to the fly wheel. The great objection to this engine, as it was then constructed, was the apparent necessity, on account of a piston not being tight enough, of using an India rubber diaphragm in its place, which would make it impractical for large engines. But while experimenting upon and endeavoring to do away with the use of the diaphragm, Mr. Keely accidentally discovered another new motor, a new and heretofore unknown vapor! How he discovered this vapor, of course, like a sensible man, he kept to himself till he could cover his invention with a patent, to prevent unscrupulous men from stealing his discovery. He saw plainly that this vapor could be compressed and made to give almost an unlimited amount of pressure, and that it could be made to propel an engine precisely as a steam engine is propelled, and of course it would be superior to his atmospheric motor, because it would do away with the objection of using a diaphragm.

Mr. Keely forthwith set himself to work to construct a mechanical apparatus to produce this vapor, and after a vast amount of experimenting he succeeded almost beyond his expectation. All the description I can give of the apparatus is to say that it is called a "Generator" or "Multiplicator," that it is about three feet high, two feet long and thirteen inches deep, made of brass and wrought iron in a heavy and strong manner, the whole of which consists of a series of iron chambers, cylindrical in form, connected by pipes furnished with various cocks and valves. This multiplicator was suspended from the ceiling by a chain three feet above the floor, showing it to be entirely disconnected with anything else, except the pipe connecting it with the "Receiver." The vapor generated is conveyed to the receiver and from the receiver it is conveyed by a "feed pipe" to the engine. The receiver is made out of wrought iron, two inches thick, capacity about twenty gallons, and shaped like a soda fountain. The peculiarity of this receiver is, it is made of wrought iron, without a rivet, and entirely welded. The question is how could a receiver, shaped like a soda fountain, be made of wrought iron, entirely welded without an anvil inside, and without a rivet? Such a receiver was made for I saw it with my own eyes, and saw it was of wrought iron. It would appear as though Mr. Keely was doing impossibilities. The engine is the ordinary engine such as is used for steam.

The peculiarity of this vapor is, that it can only be used to the best advantage at a pressure of 20,000 to 30,000 pounds to the square inch! The engineer, when he reads this statement, will say "that is an utter impossibility!" "No boiler," or rather reservoir, could be constructed to withstand such a gigantic pressure! It would tear an engine to pieces at that pressure! No pipe would be strong enough to stand that pressure! No valve or cock could be made tight enough to resist that pressure! It would be impossible to control that awful pressure! A vapor that can produce such a pressure, necessarily must be thinner than air, and with a pressure of 20,000 to 30,000 pounds to the square inch, this thin vapor would press itself through the pores of the metal, holding it. When I heard, several months ago, that Keely's motor was run up to that immense pressure, I expressed precisely the same views of it being impossible to make that motor practicable for use, for the same reasons given in the foregoing sentence. But through the inventive and mechanical genius of Mr. Keely those apparently insurmountable difficulties were swept away, and he is enabled to control his vapor at that immense pressure and run his engine with precisely the same ease at which the ordinary steam engine is run. I will state in detail how these difficulties were overcome:

First. How could a "receiver" be made strong enough to stand the pressure? It is well known that the weakest point of a boiler is where it is riveted. If a boiler could be made entirely of welded iron without rivets, it would be one-third stronger, consequently a welded "receiver" has that advantage in strength. The smaller the boiler the stronger it is. A boiler twenty-four inches in diameter will stand twice the pressure that a boiler forty-eight inches in diameter can of the same thickness of iron, or three times the pressure that a boiler seventy-two inches in diameter can. Consequently a "receiver" of only about fourteen inches in diameter must be so much stronger in proportion than the large-sized boiler. A steam boiler is weakened with use by the action of intense heat corrosion, expansions and contraction, collection of scale inside, accumulation of sediment and dirt, and is liable to explode by sudden expansion of steam caused by water being too low, &c. The "receiver" preserves an equal temperature and is not exposed to any of the difficulties that the steam boiler has—it being filled constantly with a cool, dry and clean vapor. This alone gives the "receiver" at least more than double the strength of the boiler, everything else being equal. Then, above all, the receiver is about two inches thick, of solid wrought iron. The statement is made that guns made of thicker metal burst at a pressure of 17,000 pounds to the square inch. How could a receiver made of thinner metal hold 30,000 pounds pressure? The answer to be made to this is as follows: The explosion of powder being sudden is more powerful in its effects than the steady pressure of vapor in a receiver. Then, again, the bursting of cannon is caused by the intense heat of the burned powder expanding irregularly the metal. In the "receiver" the metal has a uniform heat, or rather coolness.

Second. How can the metal be made sufficiently tight to prevent this thin vapor being forced through by that immense pressure? Mr. Keely explained this to me by saying that that was his principal difficulty. He overcame it by planishing the receiver on the outside, thus closing up the pores, and by putting certain chemicals with water on the inside and corroding the metal, thus closing the pores inside with oxide.

Third. How could that immense pressure be reduced down to the ordinary steam pressure in order to run an engine? That is the simplest thing in the world to do. The vapor passes through a feed pipe the bore varying in size from that of a knitting needle to an eighth of an inch in diameter and upward, according to the size of the cylinder of the engine. For instance, in a 10-horse power engine a pipe with a bore of the knitting needle size will drive it. The vapor as fast as it gets into the cylinder through that small aperture, expands and reduces itself down to the required pressure by the time it is cut off. To illustrate. A tenth of a pint of vapor at 30,000 pounds pressure, we will say, will get through the pipe before it is cut off, into a cylinder of say two gallons capacity. This vapor expands and fills the cylinder, thus reducing its pressure in the same proportion as two gallons is to a tenth of a pint.

Fourth. How can a pipe stand that pressure? The smallness of the brass feed pipe is its strength.

Fifth. How can a stop cock or valve be made tight enough for that pressure? The smallness of a steel throttle valve, size of the end of a wooden lead pencil, jammed home by the same amount of power brought to bear on the steam throttle valves, is abundantly sufficient to hold the vapor.

Sixth. If the Receiver should burst at a pressure of 30,000 pounds, would it not be more disastrous in its effects than the bursting of a steam boiler? When a boiler explodes on a steamer, we all know it tears the whole ship to pieces. When a large gun explodes on a man-of-war, it only damages the immediate neighborhood of the gun. The explosion of a receiver would have a less disastrous effect than the explosion of a gun, for this very extraordinary reason, that when the vapor comes in contact with the atmosphere to any great degree it *ceases its expansion*, and goes back instantly to its original state—namely, air and water. Gunpowder and steam keep on expanding after they come in contact with the atmosphere. Consequently the vapor is far less dangerous than steam or gunpowder.

Seventh. The objection is brought up that the vapor at 30,000 pounds pressure would cut the metal in escaping or passing through the throttle valve. The vapor being so much thinner than air, and its being dry and cool, has far less cutting power than steam.

From the foregoing it will thus be seen how Mr. Keely has succeeded in overcoming the apparent difficulties. How he produces the vapor from his "multiplicator," or rather "generator," is only known to himself and two other gentlemen, one of whom is Charles B. Collier, Esq., a well-known patent lawyer of Philadelphia. The secret will not be divulged till the claims of the inventor or rather the discoverer are fully protected by patents in this country and in Europe. The multiplicator will work automatically and keep the receivers supplied while the engine is running. For the larger classes of engines, it is intended to multiply the number of receivers according to the size of the engine.

An exhibition of the multiplicator and engine was made in the presence of the following gentlemen: Mr. Charles B. Collier, patent lawyer; William Boekel, mechanician; William J. Rutherford, chief engineer of the United States Navy; J. Snowden Bell, mechanical engineer; Mr. John Stiltz, Mr. James S. Yarnell, Mr. J. H. Anders, Mr. E. Raffsnyder and Mr. Charles Schuellerman, all of Philadelphia, and Mr. J. S. Andrews of New York City. Mr. Boekel assisted in the manipulation of the apparatus, Mr. Rutherford made the calculations of the pressure upon the piston by the register of pressure, and Mr. Bell made a detailed record of the proceedings and operations. I will copy from Mr. Collier's printed report of this exhibition a summary of facts that were clearly established, with the certificates signed by Messrs. Boekel, Rutherford and Bell, and a communication from B. Howard Rand, M.D., professor of chemistry, showing that the vapor at present is unknown to the chemist. It will be borne in mind by the reader that this exhibition was made with the first multiplicator made by the inventor, that it only creates vapor with a registered pressure of about 2,000 pounds to the square inch; that the new multiplicator now being made by Mr. Keely is expected to create a pressure equal to 30,000 pounds to the inch.

1st. That the inventor did produce a series of evolutions or "expulsions" of a gaseous or vaporic substance, having an expansive energy of, say, 2,000 pounds to the square inch.

2d. The production of this power, from the time of establishing the water columns in the mechanical structure termed by the inventor his "multiplicator," occupied an inappreciable period of time.

3d. The passage of this gas or vapor from its point of generation to its point of utilization (in the experiments above referred to, say twelve feet) was also inappreciable.

4th. The development or production of the force was unattended by any appreciable noise.

5th. Before the commencement of the operations the tests applied to the apparatus, to-wit, blowing through its several connections, flooding it with water and discharging the water, evidenced that it contained no chemical compounds in unstable equilibrium, or of explosive character, the equilibrium of which, in the one case, could be disturbed so as to evolve gaseous products, or the explosion of which, in the other case, could be produced by the introduced water.

6th. After the test referred to in the above paragraph had been applied, it would have been impossible for the inventor or any one, to have introduced chemicals or other substance than water without detection.

7th. No heat was employed, no electricity, no galvanic action, nor was heat, electricity, or galvanic action, discernible as resultant of the operation, except that electric sparks were observed in the spur gearing of the engine, which was propelled by the vaporic force, such evolution of electricity, which was but slight, being obviously caused by frictional contact of the metallic surfaces of said gearing.

8th. The water which was introduced into the multiplicator came direct from the hydrant, under a pressure, as indicated by a gauge applied to the hydrant, of twenty-six and a quarter pounds to the square inch.

9th. The water, before its admission to the multiplicator, and after each operation upon its withdrawal from the multiplicator, was drank by myself and by others of those present, and exhibited no taste nor smell, and manifestly came out of the multiplicator as it went in, free from all substances other than those contained in the water of the Schuylkill River, from which it came.

Tenth. The vaporic or gaseous production, I, as did others present, smelt of and freely inhaled, and it had neither perceptible smell nor taste. I applied a burning candle to it, and it did not burn, nor did it extinguish the flame of the candle.

Eleventh. After the conclusion of the experiments, the multiplicator was dismantled, and the interior of it examined, and there was no residuum within it indicative of the presence of chemical or explosive compounds, or other substances than air and water.

Twelfth. The operations were conducted in a gas-lighted room, and a lighted candle was held by myself, in close proximity to the multiplicator, during the entire period of the operations.

13th. The inventor, from first to last, afforded every facility for the closest investigation, and proposed from time to time, to repeat or duplicate, as often as might be desired by any one present, either of the several operations, and afforded also every facility for the determination, to the satisfaction of those present, of the truth of his statement, as contained in his communication addressed to the writer hereof, which accompanies this report, and from which communication I now quote, to wit: "The non-presence of heat, electricity, galvanism, chemicals or preparations of any kind," other than his mechanical structure, termed a multiplicator, and air and water.

The object of this communication, for obvious reasons, is not to make known the precise nature of the invention of Mr. Keely, nor will this be done until the specifications, drawings, models, etc., now in progress, necessary for the procuration abroad and in this country of Letters Patent are completed and deposited; but I think I may say safely, that no person who witnessed the exhibitions, hereinabove described, left the room in which they were conducted with a doubt as to the perfect integrity of the inventor, or unimpressed by the extraordinary character of his invention.

In conclusion, I would remark that the operations above referred to were conducted in what is known as the "old multiplicator" of Mr. Keely, and which having been, by reason of its want of strength, dismantled some time since, was put together for the special occasion of this practical exhibition. In order to ensure safety, the operation was conducted, as stated by Mr. Keely, under restrictions as to degree of evolution, confining the production of the force within its lowest ranges.

His new multiplicator is now rapidly approaching completion. It is made of great strength of parts, and designed to be of sufficient strength to withstand the pressure of the vaporic or gaseous evolution of highest degree and greatest expansive energy, estimated by the inventor as probably equal to thirty thousand pounds and upward per square inch. It is further designed to demonstrate the continuity of the vaporic or gaseous development, and to be automatic in its action, and from that which has been accomplished by the inventor, there is, seemingly, no reason to doubt that he will attain that which he proposes to accomplish with his new mechanism.

In conclusion, I have to recommend that his request, as contained in his communication hereinbefore referred to, addressed to myself, be strictly observed, and that he be not importuned for a repetition of his experiments, inasmuch as this will delay his operations, and such time as he is not actually employed in his own workshop will be most advantageously to him, and to all persons concerned, employed in directing his mechanicians in the completion of his apparatus, and in aiding my engineering assistant, Mr. Bell, and myself, in the preparation of his patent drawings, specifications, etc. Respectfully submitted.

CHARLES B. COLLIER.

The undersigned were present during the entire exhibition referred to and described in the foregoing report of Mr. Collier. This report we have carefully read and examined.

In its narration of facts it is correct. The conclusions, as stated by Mr. Collier, under the heading "Summary," we fully indorse, as being, in our judgment, the correct conclusions deducible from the exhibitions described by him, and witnessed by us together with him.

WM. BOEKEL, Mechanician.
WM. H. RUTHERFORD,
Chief Engineer, U. S. N.
J. SNOWDEN BELL,
Mechanical Engineer.

[Communication of B. Howard Rand, M. D., to Charles B. Collier, Esq.]

The foregoing statement, signed by Chas. B. Collier, Esq., has been submitted to me by him and my opinion is requested as to whether or not the results stated therein to have been accomplished by Mr. Keely, can be accounted for by any known chemical agencies, such as the disturbance of chemical substances in unstable equilibrium, by the action of water or air brought in contact with them in the apparatus described.

In reply to the question addressed to me, I would state that I am unable to account for the result stated to have been produced by any known chemical decomposition.

The celerity of the operation, the absence of noise, the absence of heat, electricity or galvanic action as a producing clause, and the like absence of heat, electricity or galvanic action as resultants, together with the negative qualities of the produced gas or vapor, lead me to the conclusion that the result alleged to have been produced was by some agency or power not known at present to chemists.

I have not seen the apparatus, and my views are given simply upon the foregoing report of Mr. Collier.

B. HOWARD RAND, M. D.,
Prof. of Chemistry in Jefferson Med. Col.

According to this summary of Mr. Collier's report, it will be seen that Mr. Keely has discovered a vapor unknown to the chemist; that he has succeeded in running an engine with that vapor; that he clearly proved to the gentlemen present that there could be no chemicals or electricity used, and that the vapor was created by a secret mechanical process. Mr. Oscar A. Childs, of this city, saw the engine running last March, and he and myself can both testify that the vapor escaping at the exhaust of the engine felt like cool air, and that it was devoid of smell.

The indications are a hundred times greater that this new motor will supercede steam, than it was when Watts first made his steam engine that it would eventually move the world. The stupendous importance of this great discovery of Mr. Keely, provided it will supercede steam, as *I believe it will*, can be gathered from the fact that the power to run an engine will *cost nothing* aside from the wear of the machinery and the wages of an engineer. Of course such a motor would almost revolutionize commerce and manufacture throughout the world. It would reduce freight and passage across the ocean fully one-half. It would enable a steamer—or rather a Keely vapor ship—to sail around the globe without coaling. It would reduce the expenses of a first class ocean steamer sailing between New York and Europe, counting in several hundred tons freight room saved by doing away with coal, and bulky boilers, and counting in the saving of expensive repairs of boilers and renewing them every five years, over $200,000 per annum! A Keely motor engine would only weigh one-fifth of the weight of a steam engine and boiler of equal power, consequently it could be used for propelling carriages over the roads and street cars, etc.

I could tell of other wonderful things Mr. Keely has done, and what he proposes to do, but I will not incur the reputation of being an enthusiastic visionary what-do-you-call-him. Time will soon decide the question of the practicability of the invention. The company who are now interested with Mr. Keely propose to have an engine on public exhibition next fall, and they propose to drive a portion of the power in the halls of the Centennial exhibition with a Keely engine next year.

In conclusion I wish to express my acknowledgment for courtesies extended to me by Messrs. Keely, Collier, Schuckers and Sergeant, gentlemen who have an interest in the invention, and particularly for permission to publish this account of the discovery—the first accorded to any newspaper. Heretofore they have kept the discovery of this motor quiet and declined to give a report of it to the press, preferring to be unmolested till the matter had reached a shape to justify its being published.

E. C.

### Anniversary.

NEW YORK, May 16.—The anniversary service of the American Congregational Union was held this evening in the Church of the Pilgrim, Brooklyn. Rev. Dr. Storrs preached the anniversary sermon, in which he minutely reviewed the workings of the Union during the past year, which presented more than cheerful results. The following is from the statement of the Union: Number of churches aided in building since the work was undertaken, 925; amount paid therefore, $600,000. The churches aided are scattered over thirty-four States and Territories. The aided churches have contributed $28,000 to the treasury of the Union. The number of Congregational Churches outside of New England now exceed those in it by five hundred.

Shack Nasty Jim, Scar-Faced Charley and Steamboat Frank passed west on the morning train for Baxter Springs. They were attached to the troupe of Colonel Meacham and Captain Applegate in the Eastern tour, but the tour failed to be a financial success. The troupe has disbanded, and the Indians are returning to their homes. Meacham and Applegate are still in the East. The Indians report having seen President Grant; but, financially, they are broke.—*Kansas City Journal.*